NEW SPECIES OF MOLLUSKS FROM URUGUAY.

BY HENRY A. PILSBRY.

The following descriptions are based upon material collected in Uruguay by Dr. Wm. H. Rush, U. S. N. The marine shells were obtained at Maldonado Bay by dredging in from 3 to 6 fathoms depth. A list of all the species collected may be found in the "Nautilus" for May of this year, p. 6.

Few coasts of like extent have been so little explored conchologically as the eastern shores of South America from Guiana to Cape Horn. The limits to the southward of the Antillean mollusk fauna are only of late becoming known, largely through the collections made by Dr. von Ihering and others, and recorded by Dall,[1] although the collections made at Rio Janeiro and Bahia by the Wilkes Exploring Expedition,[2] and by the commission of naturalists[3] sent by the Spanish Government, have been of value in this enquiry. Mr. E. A. Smith's catalogue of the mollusks of Fernando Noronha,[4] and numerous records in the volumes on mollusca of the Challenger Reports, further swell the list.[5] It would seem that the fauna, as far south at least as the southern limit of Brazil, is preponderantly Antillean, but with a certain number of special forms not represented in the West Indies, some of them, like *Strombus Goliath*,[6] notable for their size or peculiarity. To the southward of Brazil, the special or non-Antillean forms seem to predominate over the Antillean, although there is of course a very gradual overlapping, as would be expected from the lack of any salient coastal feature

[1] Nautilus, V, pp. 26, 42; VI, p. 109; X, p. 121. Also Proc. U. S. Nat. Mus., XII, p. 773, pp. 219--362.

[2] Mollusca and Shells, by A. A. Gould.

[3] J. G. Hidalgo. Moluscos del Viaje al Pacifico, part 3. marine univalves.

[4] Journ. Linn. Soc. Lond., Zool. XX. Consult also Smith's paper on the mollusca of St. Helena and Ascension, P. Z. S., 1890, where many Antillean species are recorded.

[5] There are some brief lists of merit other than those above mentioned as well as many records for single species from this region, scattered through the general literature of conchology.

[6] This magnificent Stromb occurs on the coast of Brazil. The writer saw numerous examples in the Brazilian Fisheries Exhibit at the Columbian Exposition in Chicago in 1893.

abruptly defining regions of diverse physical features. The embouchure of the Plate River may, as Dall has suggested, mark the southern extension of typically Antillean forms, but the endemic southern forms, it seems, extend both to the north and south of it. The main exponent of this southern fauna is, of course, d'Orbigny, whose bulky tome has been of such inestimable value to all later students of South American mollusks.

When we come to the region of Magellan Strait a good many additional forms appear, and the literature is more copious. Among recent papers may be mentioned Dall's report upon forms collected by the "Albatross," Mabille & Rochebrune's Mollusks of the Mission Scientifique du Cap Horn, Smith's "Alert" shells collected by Coppinger, etc.

Pisidium Sterkianum n. sp. Plate VI, figs. 1, 2, 3, 4.

Shell somewhat inequilateral, ventricose, glossy, light yellowish. Dorsal and ventral margins about equally arcuate; anterior end decidedly and broadly truncate; posterior end moderately produced and obliquely rounded. Beaks full but rather small, and not much produced above the hinge-line. Surface very finely striated, becoming a little more coarse near the basal margin; interior grayish-white. Right valve with two lamellar, slightly curved or sinuous, parallel cardinal teeth, the laterals short, high and rather slight. In left valve the laterals are lower and longer. Length 6, height 5, diam. 3·8 mm.

From a creek in the "Prado," Montevideo, Uruguay.

Many specimens were collected. One of those opened contained numerous young, as is often observed in our northern Pisidia.

P. Sterkianum is a large species, about the size of an average *P. Virginicum*. I would identify it with *Cyclas pulchella* Orb. (not Jenyns, = *Pisidium Dorbignyi* Clessin) were it not for the very much smaller size (length 3 millimetres) of that form; the young *P. Sterkianum* of that size being much more compressed than Orbigny's figure of *C. pulchella*. *C. pulchella* was not among Orbigny's South American shells acquired by the British Museum, according to the official catalogue, and is not represented in the Museum, as Mr. E. R. Sykes obligingly informs me.

It is likely that Clessin's *description* of "*P. Argentinum*" and his figure 2*a* were from a specimen of this species; but Orbigny's *Cyclas Argentina*, which Dr. Rush collected at the original locality, is a true *Sphærium*, not unlike *S.* (*Calyculina*) *lacustre* in general ap-

pearance, but not a *Calyculina*. Clessin's figures 1 and 2 are poor copies from the Voy. Amér. Mérid., but the original figures are not good.

We have named this species in honor of Dr. V. Sterki, who has undertaken the difficult task of working up the North American Pisidia.

Pisidium vile n. sp. Pl. VI, figs. 17, 18, 19, 20.

Shell rather inequilateral, quite globose, of a yellowish corneous color. Surface glossy, very finely and evenly striated; anterior end a little straightened or truncate; posterior end narrower, produced and rounded; dorsal and basal margins about equally curved. Beaks large and full, projecting well above the dorsal margin. Interior bluish-white. Teeth in right valve: a strong, large posterior cardinal, emarginate at tip, and a low, narrow, inconspicuous upper anterior cardinal; laterals very strong and high. In the left valve a low anterior and lower posterior cardinal, the pit between them wide and deep; laterals double, unusually heavy and strong. Length 2·6, height 2·4, diam. 2 mm.

From a small creek in the "Prado," Montevideo, Uruguay.

This form differs from *Cyclas pulchella* Orb. (*Pisidium Dorbignyi* Clessin), described from Maldonado, in being smaller, shorter, with much more projecting, fuller beaks. The very large size of the posterior cardinal tooth in the right valve, and the greater reduction of the anterior cardinal, are conspicuous features. A large series was collected.

It also seems to be unlike any other Pisidia of "Archiplata," judging from the descriptions and figures of *P. Chilense* Orb., *P. Lauricochæ* and *Forbesii* Phil.[7]

Thracia Rushii n. sp. Pl. VII, fig. 30.

Shell thin, rather fragile, inequilateral, inequivalve, the right valve swollen, left valve much less so, and with lower beak than the other. White, with a thin isabella tinted cuticle toward the margins. Anterior end long, broadly rounded, dorsal and ventral margins subparallel; dorsal margin behind the beaks straightly sloping, short, posterior end abruptly truncated. Pallial sinus moderate. Hinge very slender and delicate; ossicle lunate, with the ends blunt.

Length 29, height 20, diam. 9·5 mm.

[7] Novitates Conchologicæ, III, p. 489, pl. 105.

Length 20·5, height 13·8, diam. 7·5 mm.

Length 20, height 14 mill.

Maldonado Bay, Uruguay.

T. fragilis Penn. is longer in proportion to the height, more prolonged and narrower posteriorly, and more convex.

Semele (Abra ?) Uruguayensis n. sp. Pl. VII, figs. 27, 28, 29.

Shell thin, inequilateral, the anterior end conspicuously longer, convex, smooth except for fine, faint growth-striæ. Surface slightly glossy or dull, pale isabelline, becoming white toward the beaks. Dorsal margins sloping abruptly each side of the beaks, the anterior slope nearly straight, posterior slope slightly convex ; anterior end broadly rounded, posterior end rather narrowly rounded below ; basal margin regularly rounded, becoming a little straighter near the posterior end. Beaks small, slightly projecting ; a faint ridge extending from them to the junction of the posterior and basal margins. Right valve with a small, erect and vertical posterior cardinal, and longer, larger oblique anterior cardinal tooth, and a low, slight, lamellar anterior lateral ; no posterior lateral tooth. Left valve with an erect vertical cardinal tooth, no laterals. Interior pure white ; pallial sinus very large and deep. Length 9·5, height nearly 8, diam. 4·5 mm.

Maldonado Bay, Uruguay, in 3 to 6 fathoms. Abundant.

Mesodesma Arechavalettoi (Ihering) Pilsbry, n. sp. Pl. VI, figs. 15, 16 (about two-thirds natural size).

Shell shaped much like *M. donacea* Lam., but less abruptly truncated anteriorly, and wider posteriorly. Epidermis light buff; growth-striæ as in *donacea*. Interior with the *pallial sinus very deep, extending beyond the middle of the shell ;* lateral teeth weak, the left valve with *a well developed* /\-*shaped cardinal retained in fully adult individuals,* with an accessory lamina behind it. Length 74, height 40, diam. 23 mm.

Mar del Plata, Argentina, and Maldonado Bay, Uruguay ; young specimens only from the last named locality.

This is the shell mentioned as a species of *Lutraria* in Nautilus, VI, p. 81, It is eaten in Montevideo.

After deciding the species to be new, I submitted a specimen to Professor Wm. H. Dall, who has recently made a special study of the Mactracea, and learned from him that the shell has been named *M. Arechavalettoi* by Dr. H. von Ihering. As I have been unable to find such a name mentioned in the literature examined in the

course of a rather extensive search, I conclude it to be unpublished.

M. ventricosa Gray, from New Zealand, has similar weak lateral teeth, but it is lower, shorter, and more swollen in the middle.

Types are no. 70,486 coll. A. N. S. P.

Corbula Lyoni n. sp. Pl. VII, figs. 21, 22, 23.

Shell solid and strong, nearly equivalve, very inequilateral, compressed, oblong, the beaks near the anterior third; dorsal margin straight and sloping posteriorly, convexly sloping in front; anterior end wide, rounded; posterior end narrow, obliquely truncate, terminating below in an acute angle; basal margin straightish in the middle, rather abruptly rising near the posterior angle. Outer surface dull whitish. Right valve slightly larger, noticeably surpassing the left behind the beaks and along the posterior two-thirds of the basal margin, where it closely overlaps the margin of the left valve. The valves are about equal in convexity, and have the same sculpture. A posterior area is conspicuously defined on each valve by an acute keel running from the beaks to the posterior angle; the keel is considerably bowed downward; above this the surface is closely, sharply and subregularly costulate, the riblets straight, obliquely descending in the direction of growth lines. In front of the keel, the basal half of the valves, or more, has very coarse and irregular concentric folds; on the rounded anterior end the folds become more regular and more numerous. The upper part of each valve is free from the coarse wrinkles or folds mentioned, being merely striated rather irregularly in the lines of growth. Interior flesh colored, sometimes in part olive-yellow, the margins of the valves of the latter color. In the right valve there is a recurved, triangular, acute tooth.

Length 11·75, height 6·75, diam. 3·9 mm.

Length 12·75, height 7·9 mill.

Maldonado Bay, Uruguay, in 3 to 6 fms.

This species is remarkably similar in form and sculpture to *Corbula Macgillivrayi* E. A. Smith,[8] described from south of New Guinea, in 28 fathoms. Mr. Smith's species, however, is double the size of *C. Lyoni;* it has minute sculpture not seen in the latter; the ribbing of the posterior area is coarser, and the wrinkling of

[8] Report on the "Challenger" Lamellibranchiata, Chall. Rep. Zoology, Vol. XIII, p. 30, pl. x, figs. 8–8*b* (1885).

the lower part of the valves less coarse. I know of no other *Corbula* at all similar to this remarkable species.

At Dr. Rush's suggestion, this fine species is named in honor of Commander H. L. Lyon of U. S. S. "Yantic."

Corbula Iheringiana n. sp. Pl. VII, figs. 24, 25, 26.

Shell very inequivalve and very inequilateral; moderately convex, somewhat *Donax* like in general form. Whitish under a dull, light brown cuticle. Right valve much the larger and more convex, projecting beyond the other above, the posterior three-fourths of the sinuous basal margin conspicuously surpassing the left valve. The upper margin is sloping and conspicuously concave posterior to the beaks, the posterior end truncated; basal margin moderately or slightly arcuate; anterior end obliquely truncated in front of the beaks, becoming rounded below. Surface rather irregularly wrinkled-striate, sometimes (as in the specimen figured) with some rather coarse folds on the smaller valve.

Length 9, breadth 5·5, diam. 3·8 mm.

Maldonado Bay, Uruguay, in 3 to 6 fathoms.

This is a species of peculiar contour, the valves of very unequal size and dissimilar shape, even for this genus. I have been able to find among the numerous forms described from the Antillean region, none much resembling this.

The specific name is intended to honor the only working malacologist in South America to-day. Naturalists may well congratulate themselves that the learned and virile Director of the Museu Paulista is adding to laurels fairly earned in the Fatherland, another and American wreath, by his enlightened labors upon the South American fauna.

Crassatella (Eriphyla) Maldonadoensis n. sp.

Smaller than *E. lunulata* Conrad, decidedly longer in proportion to the height, the anterior dorsal slope somewhat convex instead of straight, and far shorter than the posterior slope, while in *E. lunulata* it is straight, concave near the beaks, and longer than the other slope. The lunule is more deeply excavated, and the posterior end of the shell rounded, not subangular; beaks less elevated, less acute, directed forward more than in *E. lunulata*. Exterior white, variously suffused, maculated or interruptedly rayed with pink; having low and inconspicuous, but coarse concentric wrinkles. Interior pink in the cavity of the valves, white below the pallial line.

Teeth, hinge and interior otherwise as in *E. lunulata*. Length 4·75, height 4, diam. 1·9 mm.

Maldonado Bay, in 3 to 6 fathoms.

Numerous specimens collected are very much alike except in pattern of color.

Turbonilla dispar n. sp. Pl. VI, figs. 5, 6, 7.

Shell moderately attenuated, composed of about 8 somewhat convex whorls after the nucleus, the latter globose, partly immersed, with very short low spire of less than two whorls. Sculpture of spiral grooves at unequal intervals, with oblong punctures along the grooves; the upper part of spire, especially when slightly eroded, marked with series of square punctures. Color light brown.

Alt. 8·2, diam. 2·3 mm.

Maldonado Bay, Uruguay, in 3–6 fathoms.

Distinguished by the grooved and punctate sculpture, and the globose, Naticoid nucleus.

Turbonilla Uruguayensis n. sp. Pl. VI, figs. 8, 9, 10.

Shell of the usual slender tapering form, the greatest diameter contained about 3½ times in the height; bluish-white, thin but rather strong; the sides straight, whorls a trifle convex, with slightly but distinctly impressed sutures. Whorls 11, not counting the tilted nucleus; the two earlier whorls finely costulate or smooth from wear; succeeding whorls down to the end of the seventh with deep, regular, rather oblique ribs (about 26 in number on the seventh whorl); the following whorls vertically and becoming more finely ribbed; last whorl with the ribs decidedly weaker or subobsolete above, base convex and smooth. Apex turbinate, tilted at a right angle with the axis of the shell, consisting of nearly 3 whorls. Aperture irregularly pyriform, acuminate above, its length contained 4¼ times in the height of shell; the columella subvertical, simple, its edge revolute. Alt. 10·3, diam. 3 mm.

Maldonado Bay, Uruguay, in 3 to 6 fathoms.

Larger than any of the similarly sculptured species of the Gulf of Mexico or east coast of South America with which I have been able to make comparison.

Ocinebra cala n. sp.

Shell fusiform, solid and thick, of a dirty white color. Whorls fully 6½ or 7, convex. Sculpture: prominent longitudinal folds, which are strong but rounded and wave-like, the intervals like the

folds reversed; in number 9 to 10 on the last whorl, and about the same number on the preceding. These are crossed by rounded spiral threads which are somewhat lamellose from the fine growth-striæ. There are about 13 or 14 principal spirals, but in the region of the periphery five or six of the intervals are occupied by minor threads. Aperture one-half the total length of shell, small, long-oval; passing below into a very narrow, parallel-sided canal nearly as long as the open oval portion. Outer lip thickened and 7-toothed within; siphonal fasciole conspicuous, convex, leaving a narrow umbilical chink. Alt. 11·5, diam. 5·8 mm.

Maldonado Bay.

The general appearance of this species is somewhat like *Urosalpinx cinereus* on a small scale. The spire is more slender, the folds stronger in proportion, and the anterior canal narrow.

Urosalpinx Rushii n. sp.

Shell shortly fusiform, thick and solid, white under a dull light brown epidermis. Whorls about 6½, the earliest 1½ convex and smooth, the rest sculptured and convex, the last whorl convex and robust, excavated below. Sculpture: numerous low longitudinal folds, quite distinct and regular on the whorls of the spire, but subobsolete on the body-whorl; spiral cords about 43 on the last whorl, every fourth cord decidedly wider and more prominent, the middle one of the three intervening larger than the other two; on the spire, or in young specimens, the spirals are alternately larger and smaller. The surface is roughened and minutely lamellose throughout. Aperture pure white within, about three-fifths the total altitude of shell, long-oval, the anterior canal contracted, narrow, considerably recurved, about one-third as long as the open portion of the aperture; outer lip thick, with about 7 low denticles within; columella straight, vertical. Umbilical chink minute, the umbilical region large, excavated, surrounded by a convex, prominent siphonal funicle. Operculum very thin, with the nucleus near the base. Length 29, breadth 16 mm.

Maldonado Bay, Uruguay.

Compared with *Urosalpinx cinereus* the spiral sculpture is far finer, longitudinal folds subobsolete on the last whorl, canal contracted, etc. In *Tritonidea tincta* the sutures are not so deep, the aperture channelled posteriorly and the umbilicus obsolete; otherwise the two species are considerably alike.

Halistylus circumstriatus Pilsbry. Pl. VI, fig. 21.

Nautilus, XI, May, 1897, p. 7.

Maldonado Bay, in company with *H. columnus* Dall.

Ancylus Rushii Pilsbry, n. sp. Pl. VI, figs. 11, 12, 13, 14.

A small, very strongly hooked species. Aperture narrow, wider anteriorly. Spire produced beyond the right margin. More elevated and more curved and narrower than *A. concentricus* Orb. or *barilensis* Moric., which are both much larger; decidedly narrower, more convex and more curved than *A. obliquus*, of which some hundreds of examples were collected by Dr. Rush. Length 3·75, breadth of aperture 1·7, height 1·5 mm.

Creek in the "Prado," Montevideo, Uruguay.

EXPLANATION OF PLATES VI AND VII.

Plate VI, figs. 1, 2, 3, 4. Pisidium Sterkianum.
" " " 5, 6, 7. Turbonilla dispar.
" " " 8, 9, 10. Turbonilla Uruguayensis.
" " " 11, 12, 13, 14. Ancylus Rushii.
" " " 15, 16. Mesodesma Archavalettoi (Ihering) Pilsb. about two-times natural size.
" " " 17, 18, 19, 20. Pisidium vile.
" " fig. 21. Halistylus circumstriatus.
Plate VII, figs. 21, 22, 23. Corbula Lyoni.
" " " 24, 25, 26. Corbula Iheringiana.
" " " 27, 28, 29. Semele (Abra?) Uruguayensis.
" " fig. 30. Thracia Rushii.